I ſuppoſe proceeds partly from the Waters unequally cooling and preſſing the parts of the drop, and partly from the ſelf-contracting or ſubſiding quality of the ſubſtance of the Glaſs: For the vehemency of the heat of the drop cauſes ſuch ſudden motions and bubbles in the cold Water, that ſome parts of the Water bear more forcibly againſt one part then againſt another, and conſequently do more ſuddenly cool thoſe parts to which they are contiguous.

A Second Argument may be drawn from the Experiment of cutting Glaſſes with a hot Iron. For in that Experiment the top of the Iron heats, and thereby rarifies the parts of the Glaſs that lie juſt before the crack, whence each of thoſe agitated parts indeavouring to expand its ſelf and get elbow-room, thruſts off all the reſt of the contiguous parts, and conſequently promotes the crack that was before begun.

A Third Argument may be drawn from the way of producing a crack in a ſound piece or plate of Glaſs, which is done two wayes, either Firſt, by ſuddenly heating a piece of Glaſs in one place more then in another. And by this means *Chymiſts* uſually cut off the necks of Glaſs-bodies, by two kinds of Inſtruments, either by a glowing hot round Iron-Ring, which juſt incompaſſes the place that is to be cut, or elſe by a *Sulphur'd* Threed, which is often wound about the place where the ſeparation is to be made, and then fired. Or Secondly, A Glaſs may be cracked by cooling it ſuddenly in any place with Water, or the like, after it has been all leiſurely and gradually heated very hot. Both which *Phænomena* ſeem manifeſtly to proceed from the *expanſion* and contraction of the parts of the Glaſs, which is alſo made more probable by this circumſtance which I have obſerved, that a piece of common window-glaſs being heated in the middle very ſuddenly with a live Coal or hot Iron, does uſually at the firſt crack fall into pieces, whereas if the Plate has been gradually heated very hot, and a drop of cold Water and the like be put on the middle of it, it only flaws it, but does not break it aſunder immediately.

A Fourth Argument may be drawn from this Experiment; Take a Glaſs-pipe, and fit into it a ſolid ſtick of Glaſs, ſo as it will but juſt be moved in it. Then by degrees heat them whilſt they are one within another, and they will grow ſtiffer, but when they are again cold, they will be as eaſie to be turned as before. This Expanſion of Glaſs is more manifeſt in this Experiment.

Take a ſtick of Glaſs of a conſiderable length, and fit it ſo between the two ends or ſcrews of a Lath, that it may but juſt eaſily turn, and that the very ends of it may be juſt toucht and ſuſteined thereby; then applying the flame of the Candle to the middle of it, and heating it hot, you will preſently find the Glaſs to ſtick very faſt on thoſe points, and not without much difficulty to be convertible on them, before that by removing the flame for a while from it, it be ſuffered to cool, and then you will find it as eaſie to be turned round as at the firſt.

From all which Experiments it is very evident, that all thoſe Bodies, and particularly Glaſs, ſuffers an Expanſion by Heat, and that a very conſiderable

ſiderable one, whilſt they are in a ſtate of Fuſion. F
mention, *being nothing but an effect of a very ſtrong*
whereby the parts are, as it were, looſened from each ot
an interjacent ſpace or vacuity; it follows, that all th
neceſſarily take up much more room then when t
quietly upon each other. And this is further conf
Alabaſter, which will manifeſtly riſe a ſixth or eight
whilſt it is boyling, then it will remain at, both bef
ed. The reaſon of which odd *Phænomenon* (to hint
is this, that there is in the curious powder of Alab
Stones, a certain watery ſubſtance, which is ſo fi
ſolid Particles, that till the heat be very conſiderab
but after the heat is increaſed to ſuch a degree, t
in vapours, and thereby ſo ſhake and looſen the ſm
der from each other, that they become perfectly of
dy, and one may move a ſtick to and fro through i
water, and the vapours burſt and break out in bu
water, and the like; whereas, both before thoſe
away, and after they are quite gone; that is, befo
boyling, all thoſe effects ceaſe, and a ſtick is as dif
in it as in ſand, or the like. Which Explication I
time; but this is not a fit place for it.

To proceed therefore, I ſay, that the dropping of
to cold Water, does make the parts of the Glaſs ſuff
The firſt is, of thoſe parts which are neer the Surfac
as I ſaid before, contracting Bodies, that is, *by the aba*
culty the parts falling neerer together; the parts ne
muſt needs loſe much of their motion, and impart
(which the Ebullition and commotion of it manife
a ſolid and hard cruſt, whilſt the innermoſt parts
panded; whence, as they grow cold alſo by degrees
rily be left at liberty to be condenſed, but becau
outward cruſt, the contraction cannot be admitted
many very ſmall, and before inconſpicuous, bubbl
Glaſs, upon the ſubſiding of the parts of the Glaſs, th
ed in them has liberty of expanding it ſelf a little, a
grow much bigger, which is the ſecond Contraction.
firmed from the appearance of the Drop it ſelf: for
we ſee, firſt, that it is irregular and ſhrunk, as it wer
yielding a little of the hardened Skin to a Contract
moſt Surface is ſettled; and as for the internal pa
naked Eye perceive abundance of very conſpicuou
Microſcope many more.

The Conſideration of which Particulars will eaſi
on probable, that is, that the parts of the drop will
of a rarified Texture; for if the outward parts of
hard cruſt, will indure very little Contraction, and